



Generally Licensed Items and Exempt Commodities in the Army

21 July 2010

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AGENDA

- I. References
- II. Background
- III. Nuclear Regulatory Commission Requirements
- IV. Army Requirements
- V. Examples



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Background

- U.S. Nuclear Regulatory Commission authority
 - Atomic Energy Act of 1954
 - Energy Reorganization Act of 1974
 - Nuclear materials: source material, special nuclear material, byproduct material, some forms of radium
- U.S. Nuclear Regulatory Commission jurisdiction
 - Non-Agreement States (15)
 - U.S. trust territories and possessions
 - Areas of Exclusive Federal Jurisdiction within Agreement States
 - Nuclear reactors
 - U.S. armed forces bases in foreign countries (NRC's policy is that it does not exercise its jurisdiction as long as the armed forces use their own internal permit systems)



References

- Title 10, Code of Federal Regulations
 - Part 30, Rules of General Applicability to Domestic Licensing of Byproduct Material
 - Part 31, General Domestic Licenses for Byproduct Material
 - Part 40, Domestic Licensing of Source Material
 - Part 70, Domestic Licensing of Special Nuclear Material
- AR 385-10, The Army Safety Program, 23 Aug 07
 - DA PAM 385-24, The Army Radiation Safety Program, 24 Aug 07



Nuclear Regulatory Commission Requirements

10 CFR, Part 30, § 30.3 Activities requiring license

(a) Except as provided ..., no person shall manufacture, produce, transfer, receive, acquire, own, possess, or use byproduct material except as authorized in a specific or general license issued in accordance with the regulations in this chapter.



Nuclear Regulatory Commission Requirements

10 CFR, Part 30, § 30.14 Exempt concentrations.

- (a) ... any person is exempt from the requirements for a license ... to the extent that such person receives, possesses, uses, transfers, owns or acquires products or materials containing byproduct material in concentrations not in excess of those listed in § 30.70.



Nuclear Regulatory Commission Requirements

10 CFR, Part 30, § 30.15 Certain items containing byproduct material.

(a) ... any person is exempt from the requirements for a license ... to the extent that such person receives, possesses, uses, transfers, owns, or acquires the following products:

(Certain timepieces, precision balances, marine compasses, smoke detectors, electron tubes, internal instrument calibration sources)



Nuclear Regulatory Commission Requirements

10 CFR, Part 30, § 30.18 Exempt quantities.

(a) ... any person is exempt from the requirements for a license ... to the extent that such person receives, possesses, uses, transfers, owns, or acquires byproduct material in individual quantities, each of which does not exceed the applicable quantity set forth in § 30.71, Schedule B.

Cesium-137 10 μ Ci

Barium-133 10 μ Ci

Cobalt-60 1 μ Ci

Strontium-90 0.1 μ Ci



Nuclear Regulatory Commission Requirements

10 CFR, Part 30 (license-exempt)

- § 30.19 Self-luminous products containing tritium, krypton-85, or promethium-147.
- § 30.20 Gas and aerosol detectors containing byproduct material.



Nuclear Regulatory Commission Requirements

10 CFR Part 30, § 30.31 Types of licenses.

Licenses for byproduct material are of two types: General and specific.

- (a) The Commission issues a specific license to a named person who has filed an application for the license under the provisions of this part and parts 32 through 36, and 39.
- (b) A general license is provided by regulation, ..., and is effective without the filing of an application However, registration with the Commission may be required by the particular general license.



Nuclear Regulatory Commission Requirements

10 CFR, Part 40, § 40.13, Unimportant quantities of source material.

Any person is exempt from the regulations in this part ...

- ... source material is by weight less than one-twentieth of 1 percent (0.05 percent) of the mixture, compound, solution or alloy ...

- ... unrefined and unprocessed ore containing source material ...

- ... Any quantities of thorium contained in incandescent gas mantles, vacuum tubes, welding rods, electric lamps for illuminating purposes ...

- ... Source material contained in ... Glazed ceramic tableware, ... Piezoelectric ceramic ...; Glassware ...; Glass enamel or glass enamel frit

- ... tungsten or magnesium-thorium alloys

- ... [depleted] uranium contained in counterweights installed in aircraft, rockets, projectiles, and missiles...

- Natural or depleted uranium metal used as shielding constituting part of any shipping container ...

- Thorium contained in finished optical lenses ...



Nuclear Regulatory Commission Requirements

10 CFR, Part 40, § 40.22 Small quantities of source material.

- (a) A general license is hereby issued authorizing ...
Federal ... government agencies to use and transfer
not more than fifteen (15) pounds of source material
....



Army Requirements (DA PAM 385-24)

2–3. Army radiation authorizations

- a. The Army uses ARAs to control ionizing radiation sources that the NRC does not license (including machines that emit ionizing radiation).
- b. The Army's ARA program is similar to the NRC's licensing program. The Army applies NRC regulations and guidance, modified as necessary, in its control of ARA ionizing radiation sources. Most ARA conditions are similar to standard NRC license conditions.

...

- (2) The NRC's regulations regarding license-exempt concentrations (see 10 CFR 30.14) and quantities (see 10 CFR 30.18) are applied similarly to ARA exemption upon HQDA approval. ...

...

- d. In special cases where NRC general license requirements attach to centrally purchased radioactive devices, the CG, AMC, can issue an ARA to ... ensure that the general license requirements are met, ...



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Examples

GE EntryScan3 Explosives Detector System

- 10 CFR 31.5 general license
- Foil source, no more than 10 mCi of ^{63}Ni
- Requires leak testing and inventory/transfer notification





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Examples

VAPOR TRACER 2

- Radioactive source: 10 millicuries of nickel-63
- Leak test requirement: annually
- Accountability: annual inventory
- Repair: manufacturer or manufacturer-trained





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Examples

Itemiser³

- Radioactive Source: 10 millicuries of nickel-63
- Leak test requirements: annually
- Accountability: annual inventory





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Examples

- **Radioactive check source**
 - 0.25, 1, and 5 μCi cesium-137
 - 1 μCi barium-133





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